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Nicholas A Pandiscio
Pandiscio & Pandiscio
470 Totten Pond Road
Waltham, MA 02451-1914

EXAMINER	
HERNANDEZ, NELSON D	

ART UNIT	PAPER NUMBER
2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/640,405	CRAWFORD ET AL.	
	Examiner	Art Unit	
	Nelson D. Hernandez	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2000*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-3 and 17* is/are allowed.

6)☒ Claim(s) *4-7,9-16 and 18-20* is/are rejected.

7)☒ Claim(s) *8 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Jan 2, 2002*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *Aug 25, 2004* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The examiner apologizes for the typographical error as indicated in paragraph No. 11 in the previous Office Action, mailed on August 17, 2004. This Office Action is meant to REPLACE the previous Office Action. The Applicant is reminded that a shortened statutory period for reply is set to expire 3 months from the mailing date of this communication.

Claim Objections

2. Claim 10 and 11 are objected to because of the following informalities: claims 10 and 11 do not specify which signals are produced non-sequentially. Is it the modified signal or the signal captured by varying the exposure times? Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi, US 2002/0071044 A1.

Regarding claim 14, Takahashi discloses a camera system (Figs. 1 and 12) comprising means (Fig. 1: 104) for producing a series of video signals representing a sequence of video fields or frames of a selected optical image with at least certain

of the video fields or frames comprising data representing a first exposure level and others of said fields or frames comprising video data representing a second greater or lesser exposure level (See fig. 9, fields of $1/1000$ and $1/120$); and means (See fig. 5) for processing and utilizing said video signals to provide a flicker free video display of said selected optical image (Page 3, 0050; page 6, 0072; page 5, ¶ 0064).

Regarding claim 15, Takahashi discloses that the video fields or frames are interspersed in said sequence among said other fields or frames (See fig. 9; Page 5, ¶ 0069).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4-7, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi, 2002/0071044 A1 in view of Haga, JP 03179889 A.

Regarding claim 4, Takahashi discloses a method of producing a video recording with improved dynamic range comprising: providing a video sensor (Fig. 1: 103) capable of converting an optical image into a video signal comprising a sequence of video fields or frames (See fig. 3) representing the optical image (Page 2, ¶ 0045); operating said video sensor to capture an optical image and simultaneously varying the amount of light (Page 6, ¶ 0072) received by said video sensor during the time frame of each video field or frame so that the resulting video

signal representing said captured optical image will constitute a sequence of video fields or frames comprising at least first and second fields or frames representing substantially different exposure values of the captured image occurring repetitively in said sequence (Page 3, ¶ 0050; page 6, ¶ 0072; see also fig. 12 for field memories). Takahashi does not explicitly teach deriving from said resulting video signal a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal.

However, Haga teaches an automatic frame/field switching unit for imaging systems (Fig. 1), wherein the switching unit comprises first and second memories (Fig. 1: 11 and 12) for storing the first and second received fields or frames from an imaging system output and a selector (Fig. 1: 14) that when a detected signal of the absence of blur is received from the motion detector (Fig. 1: 13), said selector outputs the digital video signal in which the pixel data stored in the first and second field memories are synthesized, and when a detected signal of the existence of blur from the motion detector, the selector selects the pixel data of either the first field memory or the second field memory and outputs the digital video signal in which the lines of the pixel data are synthesized so that they may be displayed twice, providing images without blur (Translation, page 4, lines 6-20).

Therefore, taking the combined teaching of Takahashi in view of Haga as a whole, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takahashi by incorporating an automatic frame/field switching

unit to obtain a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal in order to provide a video signal without blur as suggested by Haga (Translation, page 4, lines 6-20).

Regarding claim 5, Takahashi in view of Haga teach the step of recording said resulting video signal for use subsequently to drive a display means so that said captured optical image may be displayed according to the information contained in said first or second fields or frames (See Takahashi, page 3, ¶ 0046).

Regarding claim 6, Takahashi teaches the use of blanking or blackening the data from a field of the video signal in order to replace said data with the data from the other field to improve the picture quality (Page 3, ¶ 0055).

Regarding claim 7, Takahashi discloses a video camera (Fig. 1) for capturing an optical image and producing an output video signal that characterizes a continuous sequence of video fields or frames (See fig. 3) representing the captured image, said camera comprising a video detector means (Fig. 1: 103) for generating said output video signal according to the light received from said image and exposure control means (Page 3, 0050; page 6, 0072) for adjusting the amount of light received by said video detector from the optical image; an exposure controller (Page 3, 0050; page 6, 0072) for said exposure control means so as to vary the amount of light on a video field or frame basis, whereby said output video signal characterizes an alternating sequence (Figs. 3, 9 and 12; page 5, ¶ 0069) of at least

first and second fields or frames of substantially different exposures (Page 3, ¶ 0050; page 6, ¶ 0072; page 5, ¶ 0069). Takahashi does not explicitly teach means responsive to said output video signal for accomplishing one or more of the following actions: (a) producing a video display in response to only said first fields or frames; (b) producing a video display in response to only said second fields or frames; and (c) recording said output video signal for use subsequently to produce a video display in response to said first fields or frames or said second fields or frames.

However, Haga teaches an automatic frame/field switching unit for imaging systems (Fig. 1), wherein the switching unit comprises a first and second memory (Fig. 1: 11 and 12) for storing the first and second received fields or frames from an imaging system output and a selector (Fig. 1: 14) that when a detected signal of the absence of blur is received from the motion detector (Fig. 1: 13), said selector outputs the digital video signal in which the pixel data stored in the first and second field memories are synthesized, and when a detected signal of the existence of blur from the motion detector, the selector selects the pixel data of either the first field memory or the second field memory and outputs the digital video signal in which the lines of the pixel data are synthesized so that they may be displayed twice, providing images without blur (Translation, page 4, lines 6-20).

Therefore, taking the combined teaching of Takahashi in view of Haga as a whole, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takahashi by incorporating an automatic frame/field switching unit to obtain a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and

applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal in order to of provide a video signal without blur as suggested by Haga (Translation, page 4, lines 6-20).

Regarding claim 18, Takahashi discloses a method of producing a video recording with improved dynamic range comprising:

providing a video sensor (Fig. 1: 103) capable of converting an optical image into a video signal comprising a sequence of video fields or frames (Fig. 3) representing the optical image (Page 2, ¶ 0045);

operating said video sensor to capture an optical image and simultaneously varying the amount of light (Page 6, ¶ 0072) received by said video sensor during the time frame of each video field or frame so that the resulting video signal representing said captured optical image will constitute a sequence of video fields or frames comprising at least a plurality of first fields or frames representing a first exposure value of the captured image and a plurality of second fields or frames representing a second exposure value of the captured image, with said first fields or frames being interspersed (See fig. 9) among said second fields or frames in said sequence (Page 3, ¶ 0050; page 6, ¶ 0072; see also fig. 12 for field memories). Takahashi does not explicitly disclose deriving from said resulting video signal a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal.

However, Haga teaches an automatic frame/field switching unit for imaging systems (Fig. 1), wherein the switching unit comprises first and second memories (Fig. 1: 11 and 12) for storing the first and second received fields or frames from an imaging system output and a selector (Fig. 1: 14) that when a detected signal of the absence of blur is received from the motion detector (Fig. 1: 13), said selector outputs the digital video signal in which the pixel data stored in the first and second field memories are synthesized, and when a detected signal of the existence of blur from the motion detector, the selector selects the pixel data of either the first field memory or the second field memory and outputs the digital video signal in which the lines of the pixel data are synthesized so that they may be displayed twice, providing images without blur (Translation, page 4, lines 6-20).

Therefore, taking the combined teaching of Takahashi in view of Haga as a whole, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takahashi by using an automatic frame/field switching unit to obtain a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal in order to provide a video signal without blur as suggested by Haga (Translation, page 4, lines 6-20).

Regarding claim 19, Takahashi discloses a method of recording and displaying video images comprising;

capturing a series of successive video images using different exposure times (See figs. 3, 9 and 10), with the exposure times varying according to a predetermined pattern so that video images captured using a first exposure time are interspersed in said series with video images captured using a second different exposure time (Page 3, ¶ 0049 and ¶ 0050; page 5, ¶ 0069; page 6, ¶ 0070 and ¶0072);

producing a video signal representing said series of video images in the order that they are captured (See figs. 9 and 10; page 5, ¶ 0069). Takahashi does not teach using said video signal to generate a video display of the video images captured using only said first exposure time.

However, Haga teaches an automatic frame/field switching unit for imaging systems (Fig. 1), wherein the switching unit comprises first and second memories (Fig. 1: 11 and 12) for storing the first and second received fields or frames from an imaging system output and a selector (Fig. 1: 14) that when a detected signal of the absence of blur is received from the motion detector (Fig. 1: 13), said selector outputs the digital video signal in which the pixel data stored in the first and second field memories are synthesized, and when a detected signal of the existence of blur from the motion detector, the selector selects the pixel data of either the first field memory or the second field memory and outputs the digital video signal in which the lines of the pixel data are synthesized so that they may be displayed twice, providing images without blur (Translation, page 4, lines 6-20).

Therefore, taking the combined teaching of Takahashi in view of Haga as a whole, it would have been obvious to one of ordinary skill in the art at the time of the

invention to modify Takahashi by using an automatic frame/field switching unit to obtain a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal in order to provide a video signal without blur as suggested by Haga (Translation, page 4, lines 6-20).

7. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi, US Patent 5,420,635 in view of Haga, JP 03179889 A.

Regarding claim 9, Konishi discloses a video camera (Fig. 5) for capturing an optical image and producing an output video signal that characterizes a continuous sequence of video fields or frames (Col. 32, line 66 – col. 33, line 10) representing the captured image said camera comprising a video detector means (Fig. 5: 14) for generating said output video signal according to the light received from said image, and exposure control means (Fig. 5: 10; col. 15, lines 6-47) for adjusting the amount of light received by said video detector from the optical image; an exposure controller (Fig. 5: 10; col. 15, lines 6-47; col. 23, lines 19-40) for said exposure control means so as to vary the amount of light on a video field or frame basis, whereby said output video signal characterizes an alternating sequence of at least first and second fields or frames of different exposures (Col. 23, lines 19-40); recorder means (Col. 19, lines 17-38) for recording and playing back said output video signal (Col. 15, lines 6-47; col. 19, lines 17-38; col. 23, lines 19-40; see also fig. 5: 21 and 5: 22 for field memories). Konishi does not explicitly teach deriving

therefrom a modified video signal comprising a sequence of only said first video fields or frames or only said second video fields or frames, and means responsive to said modified video signal producing a video display in accordance with said sequence of first or second fields or frames.

However, Haga teaches an automatic frame/field switching unit for imaging systems (Fig. 1), wherein the switching unit comprises first and second memories (Fig. 1: 11 and 12) for storing the first and second received fields or frames from an imaging system output and a selector (Fig. 1: 14) that when a detected signal of the absence of blur is received from the motion detector (Fig. 1: 13), said selector outputs the digital video signal in which the pixel data stored in the first and second field memories are synthesized, and when a detected signal of the existence of blur from the motion detector, the selector selects the pixel data of either the first field memory or the second field memory and outputs the digital video signal in which the lines of the pixel data are synthesized so that they may be displayed twice, providing images without blur (Translation, page 4, lines 6-20).

Therefore, taking the combined teaching of Konishi in view of Haga as a whole, it would have been obvious to ~~an~~ one of ordinary skill in the art at the time of the invention to modify Konishi by incorporating an automatic frame/field switching unit to read the output of the multiplexer stored in the memory card to obtain a modified video signal comprising a continuous sequence of said first fields or frames or a continuous sequence of said second fields or frames, and applying said modified video signal to a display means whereby said captured optical image is displayed according to the video information contained in said modified video signal in order to

provide a video signal without blur as suggested by Haga (Translation, page 4, lines 6-20).

Regarding claim 10, Haga teaches producing the modified signal depending on a detected blur in the image signal (Translation, page 4, lines 6-20). Therefore the first and second fields or frames are produced sequentially or non-sequentially depending on the detected blur in the image signal.

Regarding claim 11, Haga teaches producing the modified signal depending on a detected blur in the image signal (Translation, page 4, lines 6-20). Therefore the first and second fields or frames are produced sequentially or non-sequentially depending on the detected blur in the image signal that can be recorded or displayed as they are produced.

Regarding claim 12, Konishi teaches that the first and second fields or frames are produced in a consistent repetitive sequence in which the period of repetition is greater than or equal to the period of two video fields or frames (Col. 32, line 66 – col. 33, line 10; col. 34, lines 51-64).

Regarding claim 13, Konishi discloses that the video detector means comprises is a CCD or MOS device (Fig. 5: 14; col. 15, lines 6-16).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi, 2002/0071044 A1 in view of Konishi, US Patent 5,420,635.

Regarding claim 16, Takahashi discloses means for processing and utilizing the video signals comprises a multiplexer (Fig. 16: 756) for blanking said certain fields or frames that comprise data representing said first exposure level and replacing said blanked fields or frames with fields or frames comprising data

representing said second exposure level, whereby to produce a modified video signal (Page 7, ¶ 0085 - ¶0086; see also page 3, ¶ 0055) and means (See fig. 5) for processing and utilizing said video signals to provide a flicker free video display of said selected optical image (Page 3, ¶ 0050; page 6, ¶ 0072; page 5, ¶ 0064). Takahashi does not explicitly disclose means for applying said modified video signal to a video display means to provide a flicker free video display of said optical image according to the data representing said second exposure level.

However, Konishi teaches a video camera (Fig. 5) having a function of controlling the exposure time of image fields or frames so as to synthesize said fields or frames to output a composite image to be displayed by a display device (Col. 19, lines 17-31).

Therefore, taking the combined teaching of Takahashi in view of Konishi as a whole, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Takahashi by incorporating a display device in order to enable the video camera to display the synthesized images output from the multiplexer as suggested by Konishi (Col. 19, lines 17-31).

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi, 2002/0071044 A1 in view of Haga, JP 03179889 A and further in view of Nakanishi, US Patent 5,488,389.

Regarding claim 20, the combination of Takahashi in view of Haga does not teach the step of using said video signal to generate a second video display of the video images captured using only said second exposure time.

However, Nakanishi teaches a circuit (Fig. 11) for a display device wherein the fields or frames are read from the memories (Figs. 11: 3 and 11: 4) in an alternately way so as to process them in order to be displayed (Col. 12, lines 25-58).

Therefore, taking the combined teaching of Takahashi in view of Haga and further in view of Nakanishi, it would have been obvious to one of ordinary skill in the art to modify the video camera taught in Takahashi and Haga by reading alternately the processed images so as to display them in order to enable the video camera to display a predetermined modified signal as suggested in Nakanishi.

Furthermore, Haga teaches modifying the first or second field based on a detected blur in the image signal (Translation, page 4, lines 6-20).

Allowable Subject Matter

10. Claims 1-3 and 17 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter:

[Claim 1 and 3] Prior arts fail to anticipate or suggest the limitation of producing a modified video signal consisting of a continuous sequence of the first and second fields or frames to selectively applying said modified video signal to a video display apparatus whereby to cause said apparatus to display said captured optical image according to the first or second fields or frames contained in said modified signal.

Takahashi discloses a method of producing a video recording with improved dynamic range comprising: providing a video sensor (Fig. 1: 103) capable of converting an optical image into a video signal comprising a sequence of video fields

or frames (See fig. 3) representing the optical image (Page 2, ¶ 0045); operating said video sensor to capture an optical image and simultaneously varying the amount of light (Page 6, ¶ 0072) received by said video sensor during the time frame of each video field or frame so that the resulting video signal representing said captured optical image will constitute a sequence of video fields or frames comprising at least first and second fields or frames representing substantially different exposure values of the captured image occurring repetitively in said sequence (Page 3, ¶ 0050; page 6, ¶ 0072; see also fig. 12 for field memories), but does not anticipate or suggest the limitation of produce a modified video signal consisting of a continuous sequence of the first and second fields or frames to selectively applying said modified video signal to a video display apparatus whereby to cause said apparatus to display said captured optical image according to the first or second fields or frames contained in said modified signal.

[Claim 17] Prior arts fail to anticipate or suggest the limitation of processing the video signal output to provide a first modified signal that defines a continuous sequence of first fields or frames, and a second modified signal that defines a continuous sequence of second fields or frames and utilizing said first and second modified video signals to produce separate displays of said captured optical image according to the exposures represented respectively by said first and second fields or frames.

Takahashi discloses a method of producing a video recording with improved dynamic range comprising: providing a video sensor (Fig. 1: 103) capable of converting an optical image into a video signal comprising a sequence of video fields

or frames (See fig. 3) representing the optical image (Page 2, ¶ 0045); operating said video sensor to capture an optical image and simultaneously varying the amount of light (Page 6, ¶ 0072) received by said video sensor during the time frame of each video field or frame so that the resulting video signal representing said captured optical image will constitute a sequence of video fields or frames comprising at least first and second fields or frames representing substantially different exposure values of the captured image occurring repetitively in said sequence (Page 3, ¶ 0050; page 6, ¶ 0072; see also fig. 12 for field memories), but does not anticipate or suggest the limitation of processing the video signal output to provide a first modified signal that defines a continuous sequence of first fields or frames, and a second modified signal that defines a continuous sequence of second fields or frames and utilizing said first and second modified video signals to produce separate displays of said captured optical image according to the exposures represented respectively by said first and second fields or frames.

12. Claims 8 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (703) 305-8717. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nelson D. Hernandez
Examiner
Art Unit 2612

NDHH

NGOC-YEN VU
PRIMARY EXAMINER